

# **TOTAL COLIFORM RULE (TCR) MICROBIOLOGY COMPLIANCE SAMPLING COLLECTION GUIDE**

Kansas Public Water Supply Systems  
using the  
Kansas Health and Environmental Laboratories



Prepared by  
Kansas Department of Health and Environment  
Bureau of Water  
Public Water Supply Section

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## **TOTAL COLIFORM RULE (TCR) MICROBIOLOGY SAMPLING**

Microbiological samples are required to be routinely collected every month for compliance with the Total Coliform Rule (TCR).

All public water supply systems are required by state regulation K.A.R. 28-15-19(a) to disinfect all drinking water provided to the public. To evaluate the effectiveness of the disinfection method employed, all systems are required by state regulation K.A.R. 28-15a-21 to submit monthly water samples from distribution taps for total coliform testing. Total coliform testing is used as an indicator of the presence of other bacteriological contaminants. Public water supply regulations can be found online at the Kansas Department of Health and Environment, Public Water Supply Section website <http://www.kdheks.gov/pws/index.html>.

The purpose of this document is to provide a quick guide for collecting microbiological samples. The Total Coliform Rule Survival Guide is available online at the KDHE, Public Water Supply Section website <http://www.kdheks.gov/pws/index.html>, and is a more extensive guide on all facets of the TCR.

The Kansas Health and Environmental Laboratories (KHEL) is part of the Division of Environment under the Kansas Department of Health and Environment (KDHE).

The KHEL fee is \$8 for coliform determination of compliance samples.

### **What is in a Microbiological Sample Kit from KHEL for routine TCR sampling?**

- 150 ml clear plastic bottle
- Return address label
- Sample submission card (sample collection instructions on the back of card)

<b>Z8400 ANYTOWN USA</b>															<b>[RT] RTOR</b>									
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*Microbiological Sampling Guide*

Figure 2-MIC indicates a microbiological sample submission card for routine TCR samples with added labeling. A sample submission card must be completed for each microbiological sample.

Fill out the form completely and neatly! If there is a problem with the sample, KHEL personnel will call the sample collector and try to resolve it. However, if they are unable to make contact the sample may be rejected and the system will have to re-collect the sample.

On the sample submission card, the boxes above *Chlorine Residual* are for recording the level of chlorine in the sample. It is important to mark whether the chlorine reading is for Free Chlorine or Total Chlorine (aka Combined Chlorine). The boxes above *Collection Location* are for recording the collection site as labeled on the system's annual bacteriological sampling site plan (e.g., street address or site zone plus number). If the sample collector feels there is something important for KHEL analysts to know about the sample, comments should be written in the *Comments* box. Each sample submission card needs to be matched with the bottle in the sample kit that has the same bottle ID number on its barcode label. If the sample kit contains sample submission cards and bottles that don't match, call KHEL at 785-296-0971 and inform them of the situation.

Pay close attention to the scheduled sample collection month on the routine sample submission card. KHEL sends the bottles out 10-15 days early each month and they can possibly arrive in the month previous to the collection date. If you collect a sample in a bottle designated for a different collection month, you may have collected too many samples in one month and not enough the next month. This mistake could place the system out of compliance for the required number of samples.

The *Chain of Custody* section of the sample submission card is where the sample collector should write their name and the date they hand the sample over to another person, whether it be a mailing service or other system personnel. The other lines in the *Chain of Custody* section only need to be used if the sample collector is passing the sample to someone other than the courier service that will be delivering the sample to KHEL.

**KHEL Account Number**      **System Name**      **Laboratory Codes Indicating Routine Sample for TCR**

Z8400   ANYTOWN USA      [RT]   RTOR

**PRINT CLEARLY - USE DARK INK**

Collector's Last Name      Ist Initial

Collection Date      Collection Time      Chlorine Residual

Collection Location

Comments:

1337900

Microbiological Sample  
Complete all required Data

Collect and Ship on:  
01/01/2020

**Chain of Custody**

Relinquished By      Received By      Date/Time

Relinquished By      Received By      Date/Time

Relinquished By      Received By      Date/Time

Relinquished By      Received By      Date/Time

Relinquished By      Received By      Date/Time

Relinquished By      Received By      Date/Time

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**Bottle ID Number**      **Sample Collection Month**      **Chain of Custody Section**

Figure 2-MIC. Details of a Microbiological Sample Submission Card for Routine TCR Samples

## COLLECTING AND SHIPPING THE MICROBIOLOGY SAMPLE

Collect and return a sample in each bottle received for your system. Routine samples must be collected within the scheduled month. The sample should be collected on a Monday, Tuesday or Wednesday that does not fall on or around a holiday. After collection, the sample must reach KHEL within 30 hours. Payment for additional courier services (next day or priority shipping) may be necessary to ensure the sample will be delivered on time.

### Collecting the Microbiology Sample

Read through the sample collection instructions that are on the sample submission card before collecting. For questions or concerns about the sample collection process, call KHEL at 785-296-0971 for assistance.

Figure 3-MIC indicates an example of a log that meets the requirements of K.A.R. 28-15a-33, it is in the system's best interest to keep a log that includes bottle ID numbers, locations where the bottles were used, chlorine residual and other sample information.

<b>TOTAL COLIFORM SAMPLING RECORD</b>						
SYSTEM NAME: _____				ACCOUNT No: _____		
DATE	TIME	COLLECTOR	SAMPLE LOCATION	CHLORINE RESIDUAL (mg/L)	pH	BOTTLE NUMBER (last 4 digits)

Figure 3-MIC. Example of a Log for Microbiological Sampling

### **Shipping the Microbiology Sample**

As soon as possible after collecting the sample, place the container and the completed sample submission card into the shipping box and tape shut. Fill out the Return Address on the shipping label and tape securely to the package. Payment for additional courier services (next day or priority shipping) may be necessary to ensure the sample will be delivered to KHEL on time.

### **SUMMARY OF MICROBIOLOGY SAMPLE COLLECTION**

- Upon receipt of the sample kit, open and review the scheduled sample collection month.
- Check that the KHEL account number is correct.
- Match each bottle to its proper sample submission card using the bottle ID numbers.
- Fill out the sample collection site address on the sample submission cards at the time of collection.
- Keep a log of microbiological sampling information.
- Follow the sample collection instructions that are on the back of the sample submission card.
- Include the completed sample submission card with each bottle
- Ship on the same day collected to ensure that the sample will arrive at KHEL within 30 hours.

The following pages indicate pictures of microbiological sample submission cards for other microbiological samples that a system may receive for collecting samples in compliance with drinking water regulations. There is not much difference between how the sample submission cards look other than the laboratory code at the top and a color coded box at the bottom. However, the purpose of the sample collected is of great significance in determining the system's compliance with drinking water regulations.

## Replacement Sample

Figure 4-MIC indicates a sample submission card for a replacement sample. The replacement sample needs to be collected and shipped on the next Monday, Tuesday or Wednesday after receiving the bottle. A replacement bottle is sent to the system when an error has occurred with a required microbiological sample for TCR.

Laboratory Codes Indicating Replacement Sample for TCR

↓

Z3400 ANYTOWN USA

REPL RTOR

PRINT CLEARLY - USE DARK INK

Collector's Last Name

1st Initial

Collection Date


Collection Time

Chlorine Residual

O AM  
O PM  
O Free  
O Total

Collection Location

Comments:

  
1340953

Microbiological Sample  
Complete all required Data

Collect and Ship on:  
01/01/2020

Chain of Custody

Relinquished By	Date/Time
Received By	Date/Time
Relinquished By	Date/Time
Received By	Date/Time
Relinquished By	Date/Time
Received By	Date/Time

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Figure 4-MIC. Sample Submission Card for a Replacement Sample

## Repeat Sample

Figure 5-MIC indicates three sample submission cards for a set of three repeat samples. Three repeat samples are required in response to a routine sample having a positive result. Repeat samples must be collected together on the next Monday, Tuesday or Wednesday after receiving the bottles, and mailed back together.

### Repeat Positive Original Sample (RPOR)

The bottle that matches the card coded with RPOR must be collected at the original positive site.

### Repeat Positive Upstream (RPUP)

The bottle that matches the card coded with RPUP must be collected within five (5) service connections up from the original positive site.

### Repeat Positive Downstream (RPDN)

The bottle that matches the card coded with RPDN must be collected within five (5) service connections down from the original positive site.

## Three Sample Submission Cards for Repeat Samples

Laboratory Codes Indicating Repeat Samples for TCR

↓

Z8400 ANYTOWN USA RP RPOR

PRINT CLEARLY - USE DARK INK

Collector's Last Name Ist Initial

Collection Date Collection Time AM PM Chlorine Residual Free Total

STEPHENSON LOC 119

Collection Location

Comments:

1340697 Microbiological Sample Complete all required Data Collect and Ship on: 01/01/2020

Chain of Custody

Relinquished By	Date/Time
Received By	Date/Time
Relinquished By	Date/Time
Received By	Date/Time
Relinquished By	Date/Time
Received By	Date/Time

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Z8400 ANYTOWN USA RP RPUP

PRINT CLEARLY - USE DARK INK

Collector's Last Name Ist Initial

Collection Date Collection Time AM PM Chlorine Residual Free Total

Collection Location

Comments:

1340698 Microbiological Sample Complete all required Data Collect and Ship on: 01/01/2020

Chain of Custody

Relinquished By	Date/Time
Received By	Date/Time
Relinquished By	Date/Time
Received By	Date/Time
Relinquished By	Date/Time
Received By	Date/Time

KANSAS HEALTH AND ENVIRONMENT LABORATORY

Z8400 ANYTOWN USA RP RPDN

PRINT CLEARLY - USE DARK INK

Collector's Last Name Ist Initial

Collection Date Collection Time AM PM Chlorine Residual Free Total

STEPHENSON LOC 119

Collection Location

Comments:

1340699 Microbiological Sample Complete all required Data Collect and Ship on: 01/01/2020

Chain of Custody

Relinquished By	Date/Time
Received By	Date/Time
Relinquished By	Date/Time
Received By	Date/Time
Relinquished By	Date/Time
Received By	Date/Time

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↑ Purple Color Coded Box Indicating Repeat Sample      ↑ Not a Collection Date. Indicates Date the Sample Kit Was Shipped From KHEL

Figure 5-MIC. Three Sample Submission Cards for Repeat Samples



Laboratory Codes Indicating Raw Water Sample and Well ID Number for GWR

↓

28400 ANYTOWN USA TG RW06 0004242

PRINT CLEARLY - USE DARK INK

Collector's Last Name 1st Initial

Collection Date Collection Time O AM O PM Chlorine Residual O Free O Total

WELL 06 Collection Location

Comments:

1340700

Microbiological Sample Complete all required Data

Collect and Ship on: 01/01/2020

Chain of Custody

Relinquished By Date/Time Received By Date/Time Relinquished By Date/Time Received By Date/Time Relinquished By Date/Time Received By Date/Time

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Green Color Coded Box Indicating Raw Water Sample for GWR

Not a Collection Date. Indicates Date the Sample Kit Was Shipped From KHEL

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Figure 7-MIC indicates that in addition to the green color coded box at the bottom of the sample submission card, the sample collection bottle for collecting a raw water sample for the GWR will have a green sticker on the lid.



Figure 7-MIC. Microbiological Sample Kit for GWR

## Temporary Routine Sample

Figure 8-MIC indicates a sample submission card for a temporary routine sample. Temporary routine samples are for systems that normally collect fewer than five (5) routine samples per month for the TCR, and had a positive result on a TCR sample in the previous month.

Laboratory Codes Indicating Temporary Routine Sample for TCR

↓

Z8400 ANYTOWN USA

TR RTOR

PRINT CLEARLY - USE DARK INK

Collector's Last Name

1st Initial

Collection Date

Collection Time

Chlorine Residual

Collection Location

Comments:

Microbiological Sample  
Complete all required Data

Collect and Ship on:  
01/01/2020

Chain of Custody

Retinquished By  
Received By  
Retinquished By  
Received By  
Retinquished By  
Received By

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↑  
Sample Collection Month

Figure 8-MIC. Sample Submission Card for a Temporary Routine Sample for the TCR

If a system normally collects fewer than five (5) routine monthly samples for the TCR and there was a positive result on a TCR sample the previous month, then beginning in the month following the positive sample the system must collect a minimum of five (5) routine samples per month until they have a month wherein all routine TCR samples are negative.

Calling KDHE with questions or concerns you may have is highly encouraged.

For questions about your microbiological sample kit or the sample collection process, call KHEL at 785-296-0971.

For questions about the Total Coliform Rule compliance or compliance monitoring schedule, call KDHE's Bureau of Water, Public Water Supply Section at 785-296-5518.